

Claims

1. A constructional module being adapted to engage one or more other corresponding constructional modules to form a structure, said module being of a predetermined configuration and adapted to cooperate with one or more conditioning elements wherein
5 the structure is configurable depending on the relative positioning of the modules and/or deployment of the conditioning elements.
2. A structure comprising:
a plurality of constructional modules being of a predetermined configuration; and
one or more conditioning elements being arranged to cooperate with the
10 constructional modules wherein adjacent of said modules engage one another to form the structure which is configurable depending on the relative positioning of the modules and/or deployment of the conditioning elements.
3. A constructional module or a structure as defined in either of claims 1 or 2 respectively wherein the constructional module is of a composite construction.
- 15 4. A constructional module or a structure as defined in claim 3 wherein the composite constructional module is fabricated from a fibre composite material.
5. A constructional module or a structure as defined in claim 4 wherein the fibre composite material is a particulate filled resin material with high strengths fibre reinforcement, or a polyester resin based material.
- 20 6. A constructional module or a structure as defined in either of claims 1 or 2 respectively wherein the constructional module is formed from a polymeric material.
7. A constructional module or a structure as defined in claim 6 wherein the polymeric material is pultruded.
8. A constructional module or a structure as defined in any one of the preceding
25 claims wherein the constructional module is shaped in the form of a trapezium including upper and lower substantially parallel chord members being interconnected at opposite ends with respective web members.

9. A constructional module or a structure as defined in claim 8 wherein each of the constructional modules is of a substantially identical shape.
10. A constructional module or a structure as defined in either of claims 8 or 9 wherein the chord and web members are formed as hollow section members.
- 5 11. A constructional module or a structure as defined in claim 10 wherein the hollow section members are square hollow section (SHS) members.
12. A constructional module or a structure as defined in any one of claims 8 to 11 wherein the trapezium-shaped constructional module includes a pair of diagonal web members arranged to add rigidity to the module.
- 10 13. A constructional module or a structure as defined in any one of the preceding claims wherein the conditioning elements are each in the form of tendons wherein deployment of said elements is effected by stressing of the tendons.
14. A constructional module or a structure as defined in claim 13 wherein the tendons are designed to locate within a hollow section of a lower and/or upper chord member, and
- 15 15. stressing of the tendons involves pre-stressing or post tensioning of the tendons and the corresponding chord member.
15. A constructional module or a structure as defined in claim 14 wherein the lower chord only includes one or more of the tendons.
16. A constructional module or a structure as defined in claim 14 wherein to provide
- 20 16. additional rigidity, both the upper and the lower chord members include said tendons.
17. A constructional module or a structure as defined in any one of the preceding claims wherein the constructional module includes interlocking means being arranged to provide interlocking of the adjacent modules.
18. A constructional module or a structure as defined in claim 17 wherein the
- 25 18. interlocking means includes an integral spigot being adapted to engage a hole of an adjacent module, or *vice versa*, and designed to permit pivotal movement between adjacent of said modules on deployment of the conditioning elements.

19. A constructional module or a structure as defined in claim 18 wherein the spigot or hole allows a hinged action between said adjacent modules.

20. A constructional module or a structure as defined in either of claims 18 or 19 wherein the spigot and/or hole together with the surrounding portion of the constructional module is reinforced.

21. A constructional module or a structure as defined in any one of the preceding claims further comprising packer elements being adapted to locate between adjacent of the constructional modules to effect reconfiguration of the structure.

22. A constructional module or a structure as defined in any one of the preceding claims wherein each of the constructional modules is a truss module.

23. A structure as defined in any one of the preceding claims wherein the structure is a building structure.

24. A structure as defined in claim 23 wherein the building structure is a roof truss clad with elongate and transversely oriented sheeting.

25. A structure as defined in claim 24 wherein the sheeting is of a channel section and fabricated of a rigid material.

26. A structure as defined in claim 24 wherein the cladding is made from a fabric.

27. A structure as defined in any one of the preceding claims wherein the structure is redeployable.

28. A method of construction, said method including the steps of:
providing a plurality of constructional modules each being of a predetermined configuration, and one or more conditioning elements being arranged to cooperate with said modules;
locating the modules adjacent one another and positioning the conditioning elements to permit engagement of said adjacent modules;

deploying the conditioning elements wherein the modules are together configured to form a structure.

29. A method as defined in claim 28 wherein the conditioning elements are each in the form of tendons and the step of deploying the conditioning elements involves stressing of
5 the tendons.

30. A method as defined in claim 29 wherein stressing of the tendons involves pre-stressing or post tensioning of the tendons which effects deployment of the structure.

31. A method as defined in either of claims 29 or 30 wherein the structure is a roof truss and stressing of the tendons provides erection of the roof truss.

10 32. A method as defined in any one of claims 28 to 31 wherein the method of construction also involves the ability to, if required, reconfigure the structure by placement of packer elements between adjacent of the constructional modules.

33. A method as defined in claim 32 wherein this reconfiguration step is effected prior to deployment of the conditioning elements.